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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,279	10/17/2001	Stephen L. Kuffner	CM01969G	7804

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EXAMINER

ZHENG, EVA Y

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/982,279

**Applicant(s)**

KUFFNER ET AL

**Examiner**

Eva Yi Zheng

**Art Unit**

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed in specification fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 10 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Laakso et al (US 5,898,740).

a) Regarding claim 16, Laakso et al disclose a collision mitigation method used in a communication system, the method comprising the steps of:

receiving a signal over a first channel (as shown in Fig. 3);

determining a set of channels that the signal will be received over (as shown in Fig. 1); and

based on the steps of determining, estimating a total number of signals in the system based on a number of known signals and a number of colliding signals (Fig. 3; Col 4, L37- Col 5, L41).

b) Regarding claim 17, Laakso et al disclose the method of claim 16 wherein the steps of claim 16 are repeatedly performed until the number of known signals is equal to the estimated total number of signals (Col 5, L33-35).

c) Regarding claim 18, Laakso et al disclose the method of claim 16 wherein the steps of claim 16 are repeatedly performed until a predetermined confidence level is obtained (Col 4, L37- Col 5, L41).

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d) Claims 1 and 10 are rejected under similar reasons as claim 16.

4. Claims 1, 7, 8, 10 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Schilling et al. (US 6,868,076 B2).

a) Regarding claim 1, Schilling et al. disclose a collision mitigation method used in a communication system, the method comprising the steps of:

estimating a signal that has been received over a first channel (abstract);

determining a set of channels that the signal will be received over (abstract); and

based on the steps of estimating and determining, removing the signal from a plurality of signals received over a second channel (Fig. 1; Col 4, L35- Col 5, L61).

b) Regarding claim 10, Schilling et al. disclose a collision mitigation method used in a multiple pass communication system, the method comprising the steps of:

in a given pass, estimating a signal that has been received over a first channel (abstract);

determining a set of channels that the signal was and will be received over in prior and subsequent passes (abstract; as shown in Fig. 1); and

based on the steps of estimating and determining, removing the signal from a plurality of signals received over a second channel (L35- Col 5, L61).

c) Regarding claim 16, Schilling et al. disclose a collision mitigation method used in a communication system, the method comprising the steps of:

receiving a signal over a first channel (abstract);

determining a set of channels that the signal will be received over (abstract); and

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based on the steps of determining, estimating a total number of signals in the system based on a number of known signals and a number of colliding signals (Fig. 1; Col 4, L35- Col 5, L61).

d) Regarding claim 7, Schilling et al. disclose the method of claim 1 wherein the first channel and the second channel are different (Col 4, L11-13).

e) Regarding claim 8, Schilling et al. disclose the method of claim 1 wherein the first channel is orthogonal to the second channel (Col 6, L13-16).

5. Claims 1-5 and 10-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyoshi et al. (US 2003/0071752 A1).

a) Regarding claim 1, Miyoshi et al. disclose a collision mitigation method used in a communication system, the method comprising the steps of:

estimating a signal that has been received over a first channel (as shown in Fig. 1);

determining a set of channels that the signal will be received over (inherent as "multi-user"; background art); and

based on the steps of estimating and determining, removing the signal from a plurality of signals received over a second channel (as shown in Fig. 1; page 3, [0027] – [0032]).

b) Regarding claim 2, Miyoshi et al. disclose the method of claim 1, wherein the step of estimating comprises estimating a received signal strength of the signal (as shown in Fig. 2).

- c) Regarding claim 3, Miyoshi et al. disclose the method of claim 1 wherein the step of estimating utilizes error correction coding (208 in Fig. 2).
- d) Regarding claim 4, Miyoshi et al. disclose the method of claim 1 wherein the steps of claim 1 are repeatedly performed until all signals are determined (as shown in Fig. 1).
- e) Regarding claim 5, Miyoshi et al. disclose the method of claim 1 wherein the signal represents at least a portion of predetermined data stored on a device (110 in Fig. 1).
- f) Regarding claim 10, Miyoshi et al. disclose a collision mitigation method used in a multiple pass communication system, the method comprising the steps of:
  - in a given pass, estimating a signal that has been received over a first channel (as shown in Fig. 1);
  - determining a set of channels that the signal was and will be received over in prior and subsequent passes (inherent as "multi-user"; background art; as shown in Fig. 1); and
  - based on the steps of estimating and determining, removing the signal from a plurality of signals received over a second channel (as shown in Fig. 1; page 3, [0027] – [0032]).
- g) Regarding claim 11, Miyoshi et al. disclose the method of claim 10 wherein the signal is removed from at least one of a prior pass and a subsequent pass (as shown in Fig. 1; page 3, [0027] – [0032]).

h) Regarding claim 12, Miyoshi et al. disclose the method of claim 10 further comprising the step of storing all signals received over their respective channels in each pass (110,111,112,113 in Fig. 1).

i) Regarding claim 13, Miyoshi et al. disclose the method of claim 10 wherein in each pass, a plurality of devices transmit their respective signals over their selected channels to a common device (as shown in Fig. 2).

j) Regarding claim 14, Miyoshi et al. disclose the method of claim 10 wherein the step of estimating utilizes error correction coding (208 in Fig. 2).

k) Regarding claim 15, Miyoshi et al. disclose the method of claim 10 wherein the steps of claim 10 are repeatedly performed until all signals are determined (as shown in Fig. 1).

l) Regarding claim 16, Miyoshi et al. disclose a collision mitigation method used in a communication system, the method comprising the steps of:

receiving a signal over a first channel (as shown in Fig. 1);

determining a set of channels that the signal will be received over (inherent as "multi-user"; background art; as shown in Fig. 1); and

based on the steps of determining, estimating a total number of signals in the system based on a number of known signals and a number of colliding signals (inherent as: "interference signals"; as shown in Fig. 1; page 3, [0027] – [0032]).

6. Claims 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (US 2001/0053143 A1).



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- a) Regarding claim 19, Li et al. disclose a method comprising the steps of:
- receiving a signal over a channel (as shown in Fig. 4);
- estimating a variance of an absolute value of the signal ([0061]); and
- based on the step of estimating, determining that a collision has occurred on the channel when the estimated variance exceeds a predetermined threshold ([0038-0040] and [0052]).
- b) Regarding claim 20, Li et al. disclose the method of claim 19 wherein the predetermined threshold is derived from a mean of the absolute value of the signal ([0027-0029]) and [0052]).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al. (US 6,868,076 B2).
- a) Regarding claim 6, Schilling et al. disclose all the subject matter described above except for the specific teaching that the first and second channel are the same, however, such limitation is merely a matter of design choice and would have been obvious in the system of Schilling et al. Schilling et al. teach a multichannel interference

canceller system, wherein a plurality of channel of signals are received at a receiver.

Interference signals or unwanted signals are subtracted in the receiver. The limitation:

"first and second channel are the same" do not define a patentably distinct invention

over that in Schilling et al. since both the invention as whole and Schilling et al. are

directed to signal collision resolution. Whether the signals received are same or

different presents no new or unexpected results, so long as the receiver cancel out

unwanted signals. Therefore, to have same first and second channel in Schilling et al.

would have been a matter of obvious design choice to one of ordinary skill in art.

b) Regarding claim 9, Schilling et al. disclose all the subject matter described above

except for the specific teaching that the first channel is quasi-orthogonal to the second

channel, however, such limitation is merely a matter of design choice and would have

been obvious in the system of Schilling et al. It is well known that orthogonal and quasi-

orthogonal are two types of channelization method. Schilling et al. teach a multichannel

interference canceller system, wherein a plurality of channel of signals are received at a

receiver, wherein the first and second channels are orthogonal. Interference signals or

unwanted signals are subtracted in the receiver. The limitation: "first channel is quasi-

orthogonal to the second channel" do not define a patentably distinct invention over that

in Schilling et al. since both the invention as whole and Schilling et al. are directed to

signal collision resolution. Whether the signals are orthogonal or quasi-orthogonal

presents no new or unexpected results, so long as the receiver cancel out unwanted

signals. Therefore, to have quasi-orthogonal channel in Schilling et al. would have been

a matter of obvious design choice to one of ordinary skill in art.

9. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi et al. (US 2003/0071752 A1).

a) Regarding claims 6 and 7, Miyoshi et al. disclose all the subject matter disclosed above except for the specific teaching of whether the first and second channel are the same or different, however, such limitation is merely a matter of design choice and would have been obvious in the system of Miyoshi et al. Miyoshi et al. teach an interference canceller system, wherein a plurality of channels of signals are received at a receiver. Interference signals or unwanted signals are subtracted in the receiver ICU section. The limitation: "first and second channel are the same" and "first and second channel are the different" do not define a patentably distinct invention over that in Miyoshi et al. since both the invention as a whole and Miyoshi et al. are directed to signal collision resolution. Whether the signals received are the same or different presents no new or unexpected results, so long as the receiver cancels out unwanted signals. Therefore, to have the same and different first and second channels in Miyoshi et al. would have been a matter of obvious design choice to one of ordinary skill in the art.

b) Regarding claims 8 and 9, Miyoshi et al. disclose all the subject matter described above except for the specific teaching that the first channel is orthogonal and quasi-orthogonal to the second channel, however, such limitation is merely a matter of design choice and would have been obvious in the system of Miyoshi et al. It is well known that orthogonal and quasi-orthogonal are two types of channelization methods. Miyoshi et al. teach an interference canceller system, wherein a plurality of channels of signals are received at a receiver. Interference signals or unwanted signals are subtracted in the

receiver. The limitation: "first channel is orthogonal to the second channel" and "first channel is quasi-orthogonal to the second channel" do not define a patentably distinct invention over that in Miyoshi et al. since both the invention as whole and Miyoshi et al. are directed to signal collision resolution. Whether the signals are orthogonal or quasi-orthogonal presents no new or unexpected results, so long as the receiver cancel out unwanted signals. Therefore, to have orthogonal and quasi-orthogonal channel in Miyoshi et al. would have been a matter of obvious design choice to one of ordinary skill in art.

### ***Conclusion***

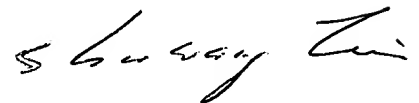
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is 571 272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Zheng  
Examiner  
Art Unit 2634

June 3, 2005



**SHUWANG LIU**  
**PRIMARY EXAMINER**